An efficient in vitro plantlet regeneration from shoot tip cultures of Curculigo latifolia, a medicinal plant

ABSTRACT

A procedure was developed for in vitro propagation of Curculigo latifolia through shoot tip culture. Direct regeneration and indirect scalp induction of Curculigo latifolia were obtained from shoot tip grown on MS medium supplemented with different concentrations and combinations of thidiazuron and indole-3-butyric acid. Maximum response for direct regeneration in terms of percentage of explants producing shoot, shoot number, and shoot length was obtained on MS medium supplemented with combination of thidiazuron (0.5 mg L−1) and indole-3-butyric acid (0.25 mg L−1) after both 10 and 14 weeks of cultures. Indole-3-butyric acid in combination with thidiazuron exhibited a synergistic effect on shoot regeneration. The shoot tips were able to induce maximum scalp from basal end of explants on the medium with 2 mg L−1 thidiazuron. Cultures showed that shoot number, shoot length, and scalp size increased significantly after 14 weeks of culture. Transferring of the shoots onto the MS medium devoid of growth regulators resulted in the highest percentage of root induction and longer roots, while medium supplemented with 0.25 mg L−1 IBA produced more numbers of roots.

Keyword: Curculigo latifolia; Shoot tip